

NWA2975 (new 2006)

Basalt
70.1 grams

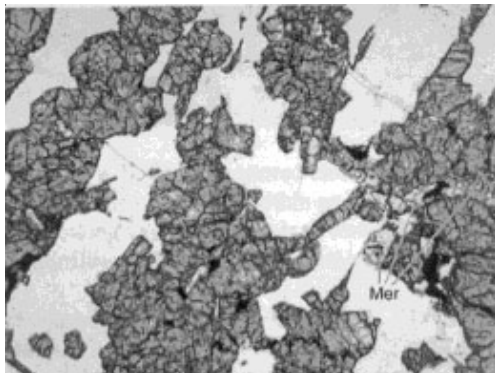


Figure 1: Thin section photomicrograph of NWA2975 (from Wittke et al. 2006). Field of view 2.3 mm. White area is maskelynite, dark is pyroxene.

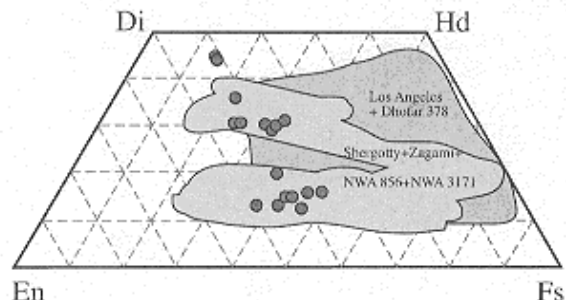


Figure 2: Pyroxene composition of NWA2975 compared with that of some other Martian shergottites (from Wittke et al. 2006).

Introduction

An abstract has been submitted to the 37th Lunar and Planetary Science Conference by Wittke et al. (2006) describing the newest probable Martian meteorite. It has a fresh fusion crust (partial), a basaltic texture and the characteristic glass pockets and thin black glass veins seen in Zagami etc.

Petrography

According to Wittke et al. (2006), NWA2975 is a fresh, medium-grained, subophitic to granular hypsbyssal basalt with intergrown prismatic pyroxene and plagioclase grains up to 3 mm long (figure 1). The hand specimen also exhibits vesicular black glass veins up to 3 mm wide and glass pockets up to 6 mm.

Accessory phases include ulvospinel, ilmenite, chlorapatite, merrillite, pyrrhotite, Si-Al-K-Na-rich glass and baddeleyite. Large ulvospinel grains contain melt inclusions.

Mineral Chemistry

Pyroxenes: The pyroxenes in NWA2975 are relatively iron rich with exsolution features (figure 2). Both augite and pigeonite are present.

Maskelynite: Plagioclase in NWA2975 has entirely been converted to maskelynite An₅₅ (Wittke et al.).

Glass: Glass pockets are vesicular.

Chromite: Ulvospinel.

Sulfide: Pyrrhotite.

Phosphate: Merrillite.

Whole-rock Composition

Not yet.

Radiogenic Isotopes

Not yet.

Cosmogenic Isotopes

Not yet.

Other Isotopes

Not yet.

Mineralogical Mode for NWA2975

	Wittke et al. 2006
Pyroxene	57.3 vol. %
Plagioclase	38.3 (maskelynite)
Opakes	2.7
Phosphate	1.7